

Inspirstar IS02PEMF

Programmable PEMF Introduction

Aug 26th, 2024



Inspirstar Inc.

Proudly serving microcurrent community
since 2005



What is Inspirstar IS02PEMF?

- Inspirstar IS02PEMF generates PEMF from microcurrent frequencies like FSM.
- PEMF frequencies, intensity, polarity and waveform are fully programmable and controllable.
- Operation Modes
 - Frequencies are loaded into IS02PEMF and run to generate PEMF.
 - Frequencies are entered in PRO Manual Run Mode and run to generate PEMF.
 - Microcurrent signals from IS02 microcurrent devices are inputted into IS02PEMF PRO and converted to PEMF.
- Same microcurrent protocols/profiles are used for IS02PEMF.
- Two versions of devices - IS02PEMF and IS02PEMF PRO



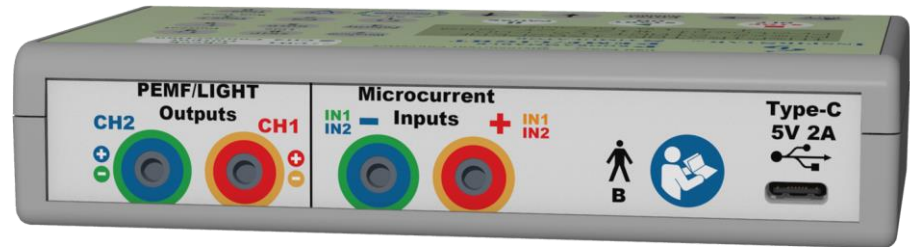
IS02PEMF

- Familiar keypad and operation as IS02LCDs (up to 99 protocols)
- Same microcurrent protocols/profiles are loaded to IS02PEMF to generate PEMF
- Two PEMF output ports
 - Connectivity status indication and alert
- Flexible power options:
 - 2xAA batteries
 - Type-C USB port to power from
 - Wall adaptors
 - External power banks



IS02PEMF PRO

- Includes all features on IS02PEMF
- Familiar PRO keypad and operation as IS02PROs(up to 999 protocols)
- Same microcurrent protocols are loaded to IS02PEMF PRO to generate PEMF
- Manual Run mode to run PEMF
- With built-in microcurrent to PEMF Converter
 - Two microcurrent input ports



PEMF Outputs

- Two independent PEMF Output ports
- Capable to drive magnetic pads iMagPad® or light pads iLightPad®(not available now)
- Positive, negative or alternating polarity outputs
 - Change the magnetic polarity of the generated magnetic field
- 10% to 100% output intensity in 10% steps
- Informative indication of the outputs
 - LED and LCD indication
 - “OPEN”: open connection, pads not connected properly
 - “High”: load too high (two many pads in series) or current too high, reduce the number of pads, or reduce the output current
 - Output current in A, and load resistance

IS02PEMF Power Options

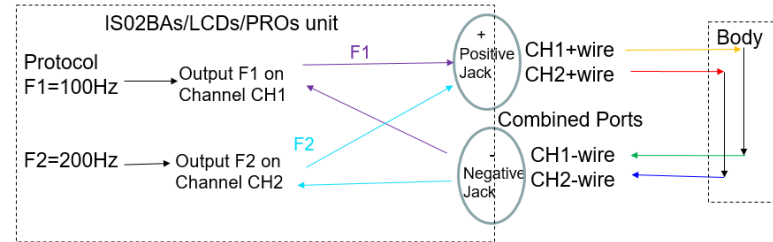
- IS02PEMF can be powered from either
 - 2x AA battery
 - USB port, either from a wall adaptor or a power bank
- Power from 2x AA battery for:
 - Low output current
 - Low load application
 - Short run time
- Power from Wall Adaptor (5V 2A) for
 - High output current;
 - High output load application (e.g. 2 pads in series, iLightPad)
 - Uninterrupted long run time
- Power from a power bank (5V 2A preferred)
 - For long time portable application
 - High output current and high output load
 - Available in variable size and capacity



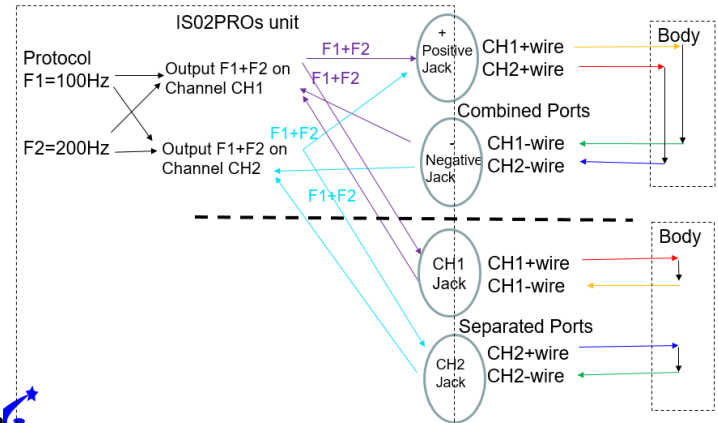
Dual Frequency Output feature

- Usually each output channel outputs one frequency. Users combine the two outputs together at the pads for most applicable protocols.
- Dual Frequency Output feature allows 1 or 2 frequencies on each channel at the same time.
- Two frequencies can be combined into one output inside the IS02 machine, instead of combining outside through wire leads.

IS02BAs/LCDs/PROs



IS02PROs DFO



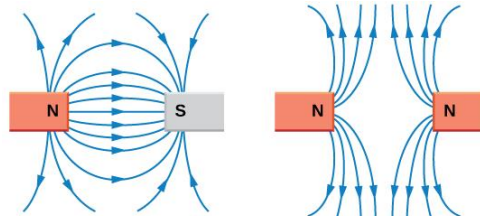
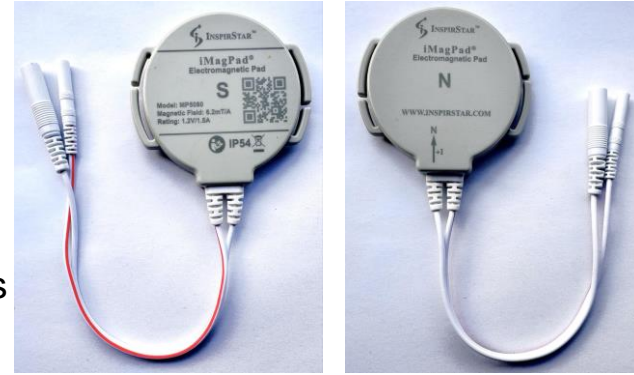
Microcurrent to PEMF Converter

- This is a built-in PEMF Converter feature in IS02PEMF PRO
- Microcurrent signals from IS02LCD/PRO/BA are inputted into IS02PEMF PRO as IN1(i1) and IN2(i2) and converted to PEMF.
- All waveform features- frequency, intensity, polarity, period and waveform, are preserved.
- IS02PEMF PRO input ports have direct connection to IS02LCD/PRO/BA output ports.
- IS02PEMF PRO can work as a converter alone, or work as a converter and with separated PEMF protocol running simultaneously.
- User has options to combine the microcurrent inputs with PEMF protocols.
 - Each PEMF output can select inputs from none, one or all of F1, F2, IN1(i1) and IN2(i2).
- Automatic Plug and Convert mode
 - IS02PEMF PRO senses microcurrent signals and automatically starts the PEMF conversion *
 - PEMF conversion shuts down automatically when no more microcurrent signal activities.

* IS02PEMF needs to be powered even it is turned off to sleep.

Inspirstar iMagPad®

- Inspirstar iMagPad® pads connect to the outputs of IS02PEMF devices and create electromagnetic fields.
- Thin magnetic pad for strong magnetic field
 - 6.2 mT/A: 6.2 milliTesla of magnetic field per Ampere current drive from IS02PEMF device
- iMagpads can be cascaded: one pad alone or two pads in series
- Magnetic fields on both sides: N or S, not shielded
- Attached to body with straps
 - One pad per strap
 - Two pads cascaded on one strap or two straps
 - E.g. pads on both side of arm or thigh for magnetic push-pull stimulating



Magnetic field strength control

- Wide Magnetic Field strength control from 1 Gauss to 90 Gauss.
- Channel output intensity in percentage 10%~100%
 - Equivalent to microcurrent intensity $40\mu\text{A}\sim 400\mu\text{A}$ in protocol
 - Single Frequency output (F1 or F2) or Dual Frequency Output (DFO) on each channel (F1+F2)
 - Doubled output intensity with DFO.
- One iMagPad creates 6.2 mT/A magnetic field (6.2 milliTesla for one Ampere drive current)
 - When output intensity is 100% with DFO F1+F2, the IS02PEMF outputs 1.46 Ampere and iMagPad creates **the strongest magnetic field 9mT(90 Gauss) peak on the center of iMagPad surface.**
 - **The lowest magnetic field can be 0.1mT(1 Gauss) peak** when output intensity is 10% with F1 only.
- Reference:
 - The magnitude of Earth's magnetic field at its surface ranges from 25 to 65 μT [Earth's magnetic field](#)
 - Average magnetic field strength is usually $\frac{1}{2}$ of peak strength
 - magnetic field strength drops quickly when the body is away from the iMagPad
 - 1 mT = 10 Gauss



IS02PEMF Model Comparison



Feature	IS02PEMF	IS02PEMF PRO
PEMF Outputs	2	2
PEMF Converter	No	Yes
Microcurrent Inputs	0	2
LCD Display	Yes	Yes
Max number of Protocols	99	999
Keypad	Non-numeric keypad	Numeric PRO keypad



IS02PEMF Application Scenarios

Applications	Devices to use	Frequencies to use	PEMF Input/Output
PEMF Standalone: Protocols are loaded into IS02PEMF to generate PEMF	IS02PEMF IS02PEMF PRO	Preloaded in IS02PEMF	Input: none Output: F1+F2 to CH1, or CH2, or both CH1 & CH2*
PEMF converter: IS02PEMF PRO is used as a magnetic converter alone to convert microcurrent signals from microcurrent unit to PEMF	Microcurrent unit: IS02PROs/LCDs/BAs Converter: IS02PEMF PRO	From the microcurrent unit	Input: IN1+IN2 Output: IN1+IN2 to CH2 *

* The actual output on two output channels can be configured in different ways.

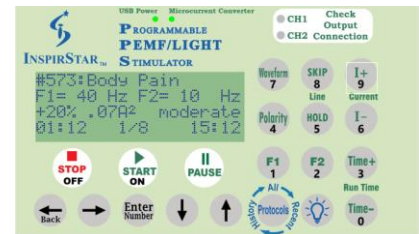
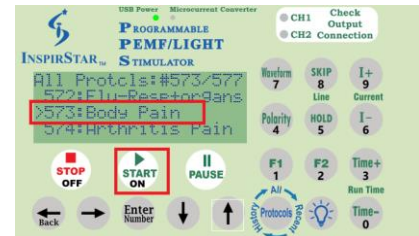
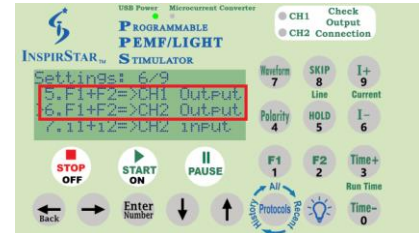
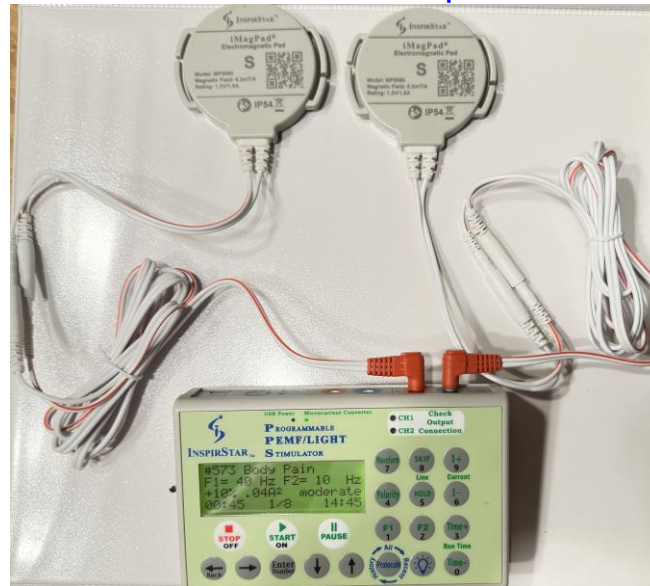
#1 IS02PEMF Standalone Application

Running protocols preloaded in IS02PEMF or IS02PEMF PRO device to generate PEMF.

CH1 output F1+F2



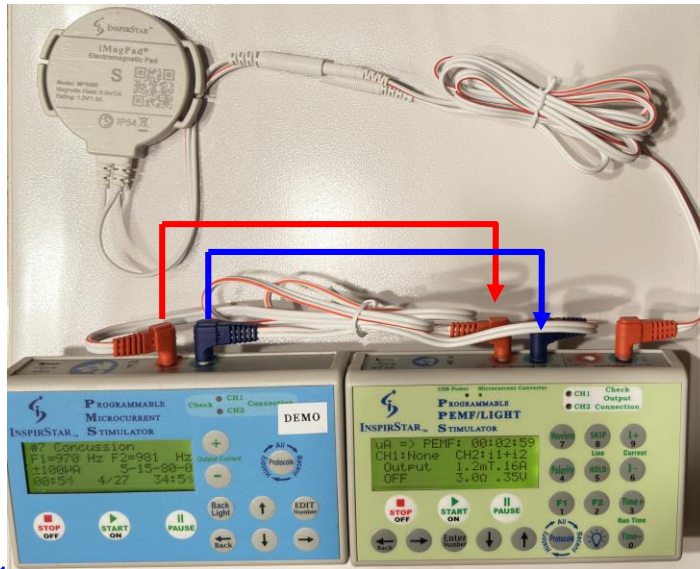
Both CH1 and CH2 output F1+F2



#2 IS02PEMF Converter Application

IS02PEMF PRO is used as a magnetic converter alone to convert microcurrent signals from microcurrent unit to PEMF.

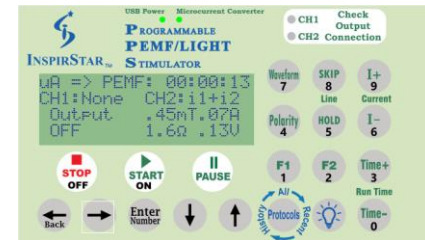
Input: I1+I2 from IS02LCDs
Output: I1+I2 on CH2



On Settings, the default
 $i1+i2 \Rightarrow CH2$

On Settings, go
to uA Converter,
press ->

Conversion
starts
automatically



IS02PEMF Package and Accessories

Standard package:

- 1x IS02PEMF or PRO main unit
- 2x wirelead
- 2x iMagPad
- 2x straps 50cm
- 2x dual plug wire (PRO only)
- Wall adaptor (5V 2A)
- USB Cable



IS02PEMF Package and Accessories

Available Accessories:

- iMagPad MP5080
- Strap: 90 cm
- Strap: 50 cm
- iLightPad 660nm (when available)
- iLightPad 850nm (when available)

Recommended to purchase from 3rd party

- 1.5V Lithium rechargeable AA battery
- Power bank with USB-A output

IS02PEMF Application Guide

For your application with IS02PEMF

1. Determine PEMF Outputs
2. Determine PEMF Input sources
3. Choose the proper power supply for IS02PEMF